

until 1882. On the value of this work (completed by Mr. Howard Saunders) it is unnecessary to dilate.

Not less important were the contributions of Newton to the ninth edition of the "Encyclopædia Britannica," these comprising not only a large series of articles on different groups and species of birds, but likewise the article "Ornithology"; the article "Birds," it should be added, being the joint work of Newton and the late Prof. W. K. Parker. With the assistance of Prof. H. Gadow, these articles were subsequently combined by their author to form the well-known "Dictionary of Birds" (1893-1896), which forms a perfect mine of information on ornithological subjects. To this work a few articles were contributed by Dr. R. W. Shufeldt, Mr. C. S. Roy, and the present writer (by whom it was deemed a special honour to be thus associated with his former teacher). The article "Ornithology," which forms the introduction to this volume, is a perfect model of a classically written essay, and includes practically everything that there is to be said regarding the history of the subject of which it treats; while the one on "Migration" is no less important and philosophical.

As regards the other ornithological work of Newton, it must suffice to refer to a chapter on the ornithology of Iceland, issued as an appendix to S. Baring-Gould's "Iceland" (1863), to one on the birds of Greenland in the "Arctic Manual" (1875), and to a list of the birds of Jamaica in a handbook to that island, published in 1881.

To assume that Newton confined his attention to ornithology would, however, give but an inadequate idea of the scope of his knowledge. From the first he was an enthusiastic student of zoological distribution, and in 1862 he read before the Cambridge Philosophical Society a paper "On the Zoology of Ancient Europe," published the same year as a pamphlet by Messrs. Macmillan. In this he directed attention, for the first time, we believe, in this country, to the fact that the name "aurochs" belongs by right to the extinct wild ox (*Bos primigenius*), and not to the bison. His studies had also convinced him that the separation of the northern portions of the two hemispheres as distinct primary zoological regions—the Palaearctic and the Nearctic—is not supported by the facts; and at his suggestion Prof. A. Heilprin in 1882 proposed to unite them under the name of the Holarctic. That this is the true view (especially if the southern portions of the eastern and western divisions be severally cut off as the Sonoran and Mediterranean transitional regions) scarcely admits of argument. A small zoological text-book, of which the first edition appeared in 1874, likewise bears witness to the breadth of Newton's knowledge.

Although essentially conservative in all matters connected with natural history, Newton could not be termed a bigoted Tory in these matters; and when he saw occasion to change or modify his views, he had no compunction in doing so. He was an early convert to evolution, and in 1888 published a pamphlet entitled "Early Days of Darwinism"; and as evidence of the elasticity of his mind in regard to lines of investigation with which he was personally out of touch, reference may be made to his earnest support of the morphological and embryological investigations of the late F. M. Balfour, and of the Mendelian researches of the present day. As regards ornithological classification, he maintained to the last the advisability of employing generic terms in a wide sense. Whether he would ever have given his approval to modern views on nomenclature and the subdivision of species are questions which need not here be discussed.

The late professor, to quote from the obituary notice in the *Times* of June 8, "was gifted

with an affectionate nature, which was not the less real because it found little verbal expression, and, possessed of old-fashioned courtesy of manner, he had the best characteristics of the race of English country gentlemen to which by birth he belonged. Staunch in his friendships, firm in his opinions, and following what he held to be right with dogged perseverance, he was a man of whom anyone might well be proud to be the friend, and one whom a very wide circle is now most genuinely mourning."

To the present writer, if he may be allowed to say so, the loss is a very real one—more so than he cares to state fully in public.

R. L.

NOTES.

WE regret to announce that Prof. A. S. Herschel, F.R.S., died on Tuesday, June 18, at his residence, Observatory House, Slough.

THE French section of the Alliance Franco-Britannique will pay a visit to London from June 30 to July 5, and will be entertained at dinner by the British section on July 1.

THE third Prehistoric Congress of France will be opened at Autun on August 12 by the president, Prof. Adrien Guébbard, and will close on August 18. Particulars may be obtained from M. Marcel Baudoin, 21 rue Linné, Paris.

FOUR lectures on plague are being delivered by Dr. W. J. R. Simpson as the Croonian lectures of the Royal College of Physicians. The first lecture was delivered on Tuesday, and the second is to be given to-day. The two remaining lectures will be delivered on June 25 and 27.

SCIENCE announces that at the recent session of the Pennsylvania Legislature the Senate voted 60,000. to enable the American Philosophical Society to erect a memorial to Franklin, but the house did not agree to the Bill.

MR. W. T. HORNADAY has presented to the New York Zoological Society his collections of heads, horns, and tusks, comprising 131 specimens, representing 108 species. These are to form the nucleus of a collection to be exhibited at the New York Zoological Park.

A REPORT from Santiago de Chile states that a severe shock of earthquake occurred at Valdivia on June 13. A violent earthquake was also felt at Kingston, Jamaica, on the same date, at 1.20 a.m. The earthquake was especially severe at Port Royal. A curious turbulence of the sea was noticed. An earthquake was felt at Gibraltar at 5 a.m. on June 16.

THROUGH the generosity of several members of the Pillsbury family, of Minneapolis, Dr. Thomas G. Lee has secured, says *Science*, for the department of histology and embryology, University of Minnesota, the working library of the late Prof. W. His, of Leipzig. This collection comprises more than 8400 monographs and other papers contributed by over 2500 different authors.

AN exhibition of engineering models, optical, electrical, and scientific instruments, technical education appliances, and tools, is to be held at the Royal Horticultural Hall, Vincent Square, Westminster, S.W., on October 22-26. In addition to exhibits by leading makers, there will be a loan collection of experimental and exhibition models and apparatus, and also lectures and demonstrations in various branches of applied science.

THE Victoria and Albert Museum has been opened to the public exactly fifty years to-day. On June 20, 1857, Queen Victoria and Prince Albert, accompanied by the Princess Royal (afterwards the Empress Frederick), the Archduke Maximilian of Austria (afterwards Emperor of Mexico), Prince Frederick William of Prussia (afterwards German Emperor), and a numerous suite, attended in the evening the opening of the South Kensington Museum, as it was at that time styled. In it there were exhibited several miscellaneous collections of a scientific character, mainly acquired from the Exhibition of 1851. The whole of the fine art collections which had been exhibited at Marlborough House since 1852 were also removed to South Kensington, and these were supplemented by valuable loans from H.M. Queen Victoria and others. Immediately after the opening of the temporary museum the erection of permanent buildings was commenced, and various portions were completed and opened in successive years. The greater part of the original iron building was taken down in 1868, and re-erected as a branch museum at Bethnal Green. The foundation stone of the new buildings was laid by H.M. Queen Victoria on May 17, 1899, and by her late Majesty's command the name of the institution was changed to that of the Victoria and Albert Museum.

THE Engineering Conference of the Institution of Civil Engineers, which began on June 18, will conclude tomorrow. On Tuesday, June 18, Dr. Francis Elgar, F.R.S., delivered the fifteenth James Forrest lecture, taking for his subject "Unsolved Problems in the Design and Propulsion of Ships." The conference was opened formally on June 19, when the president of the institution, Sir Alexander Kennedy, F.R.S., delivered his inaugural address. This evening a conversazione is to be held at the Albert Hall. The business part of the conference is being carried on in the sections, in connection with which meetings are taking place daily until 1 p.m. There are in all seven sections, which, with their chairmen, are as follows:—Section i., railways, Mr. William R. Galbraith; Section ii., harbours, docks, and canals, Sir William Matthews, K.C.M.G., who is also president-elect of the institution; Section iii., machinery, Prof. W. C. Unwin, F.R.S.; Section iv., mining and metallurgy, Mr. John Strain; Section v., shipbuilding, Dr. F. Elgar, F.R.S.; Section vi., water works, sewerage, and gas works, Sir George T. Livesey; Section vii., applications of electricity, R. E. B. Crompton, C.B. We hope to publish an article on the conference in a future issue.

Two important additions to the collection in the Natural History Museum were put on exhibition for the first time at the conversazione of the Royal Geographical Society, held in the hall of the museum on Friday last. The first is the mounted skin of a manokapi, obtained during the late Alexander-Gosling expedition on the River Welle, near Angu, in the northern part of the Congo Free State, and presented by Mr. Boyd Alexander. The second is a model of the complete skeleton of the marsupial Diprotodon, based on material obtained by Mr. E. C. Stirling in the Lake Cadibona district of south central Australia. In this skeleton some portions of the limbs and feet are represented by the original bones. Diprotodon, it will be recalled, was named many years ago on the evidence of a lower jaw described by Sir R. Owen. Now that the complete skeleton is known, there is little doubt that the creature was a gigantic relative of the wombats, retaining, perhaps, in its foot-structure evidence of arboreal ancestry. In one of the recesses on the right side of the central hall were also exhibited portraits and relics of

Linnaeus. The portraits of the great naturalist, represented by small woodcuts, were ten in number. Several Linnaean manuscripts sent from Bloomsbury were shown, as well as several books from the library of Linnaeus (the property of the Linnean Society), and certain plants from his herbarium.

In accordance with previous announcements, the autumn meeting of the Iron and Steel Institute will be held in Vienna on September 23–25. An influential reception committee has been formed, with an executive consisting of Mr. W. Kestranek, central director of the "Prager Eisen Industrie Gesellschaft" as chairman, Max Ritter von Gutmann as vice-chairman, Mr. Richard von Schoeller as treasurer, Baron von Jüptner, A. Ritter von Kerpely, Mr. F. Schuster, and Mr. Hugo von Noot as members, and Dr. Eugen Herz and Mr. H. von Noot, jun., as honorary secretaries. The provisional programme of the meeting is as follows:—On Monday, September 23, the president, council, and members will be welcomed by the reception committee, by the Government and civic authorities, and by the president of the Society of Engineers and Architects, at the headquarters of which the meeting will be held. A selection of papers will subsequently be read and discussed. In the afternoon, members and the ladies accompanying them will be taken for a drive through Vienna and in the Prater, visiting the Municipal Museum and the Town Hall, where they will be received by the Lord Mayor of Vienna, and in the evening a special performance at the Imperial Opera House will be arranged. On Tuesday, September 24, the morning will be devoted to the reading and discussion of papers, and the afternoon to a visit to the Imperial Palace at Schönbrunn. On Wednesday, September 25, the whole day will be devoted to an excursion to the Hoch-Schneeberg. In the evening the members and ladies will be invited to a banquet at the Hall of the Musical Society. At this and at all the other functions, including the visit to the opera, the members and ladies will be the guests of the Austrian Iron Works. On Thursday, September 26, will begin the excursions to the works to be visited in (1) Bohemia; (2) Styria; and (3) Moravia and Silesia.

It is reported in the daily Press that Prof. von Leyden has arrived at the conclusion that the development of cancer is due to the accumulation or absence of certain chemical substances in the liver. Further details will be awaited with interest.

In the *Bio-chemical Journal* for May (ii., Nos. 5 and 6) Drs. Garrod and Clarke describe a new case of alcaptonuria. Drs. Little and Harris discuss the metabolism in a healthy vegetarian. Dr. Barger and Mr. Dale describe the physiological action of some of the constituents of ergot. Dr. Drabble, Hilda Drabble, and Daisy Scott discuss the influence of neutral salts on the size of the cells of pleurococcus and saccharomyces, and Prof. Moore and Drs. Nierenstein and Todd publish experiments on the treatment of trypanosomiasis with atoxyl, an organic arsenical compound, followed by a mercuric salt, showing that this combination is much more successful than atoxyl alone.

At a meeting of the Pathological Society of London on June 4, Drs. Sambon and Seligman described a number of hæmogregarine parasites obtained from snakes. Dr. Pye-Smith, the president, gave a valedictory address, for the society as such ceases to exist, being merged (as the pathological section) into the new Royal Society of Medicine.

By the amalgamation of fifteen out of the twenty or twenty-five medical societies of London, the Royal Society of Medicine has been constituted, the incorporated societies forming the sections of the new society. A meeting was held on June 14th for the purpose of receiving and adopting a Royal charter. The meeting was presided over by Mr. Warrington Hayward, the president of the Royal Medical and Chirurgical Society, the wealthiest and principal society of the amalgamation, when Sir William Church was elected the first president. Each society (now a section) will carry on its special work as before. The Royal Society of Medicine will commence with a membership of 4000, an annual income of nearly 8000*l.*, and possesses a library of 80,000 volumes.

A LIST of the palæontological type specimens in the collection of the Boston (U.S.A.) Society of Natural History, by Mr. L. A. Mushman, has been published as No. 6 of vol. xxiii. of the Proceedings of that body.

BULLETIN No. 4 of the Division of Entomology, Honolulu, is devoted to a further account of the parasites of leafhoppers, by Mr. R. C. L. Perkins, together with descriptions of certain new Hemiptera, by Mr. C. W. Kirkaldy, the material having been almost entirely collected in Arizona.

A PAPER on the ants of Saxony, by Mr. H. Viekmeyer, and one on change of function in various animal organs, by Mr. A. Jacob, form the most important zoological contributions to the *Abhandlungen* of the Dresden Isis for the second half of 1906 (1907).

IN the May number of *Nature* Mr. O. J. Lie-Pettersen concludes his account of Scandinavian thrushes, in which special attention is directed to the dates of arrival of the migratory species. "F. V. H." figures a horse with a supplemental front toe, which was successfully removed in the Copenhagen Veterinary Institution.

"DWELLERS in our Rock-pools" is the title of a small illustrated booklet describing the common littoral fauna of Folkestone. The author is Mr. F. Rutt, and the pamphlet is published by Messrs. A. Stace and Sons, of Folkestone, at the price of three pence. We have also to welcome a cheap re-issue of Mr. E. W. Wade's "Birds of Bempton Cliffs," published by Messrs. A. Brown and Sons, Ltd., of London, Hull, and York, at one shilling.

THE functions of the "spiracles" in skates form the subject of an interesting article, by Mr. H. W. Rand, in the May number of the *American Naturalist*. Some time ago the author received about half a dozen skates which had been out of the water for nearly an hour, and were consequently presumed to be dead. When salt water was discharged on them from a hose, they gradually, however, showed signs of returning life, and eventually spouted copious jets of water from their spiracles. As such a phenomenon had not been previously noted by the author, he set himself to study the functions of the spiracles generally. Owing to the habit of lying flat on the sand, the spiracle, of which the primary function is to take in water, appears of much more importance to skates than to sharks. In addition to serving as an intake, it also acts as an exhalant orifice, soft substances, such as fragments of seaweed, which have gained an entrance into the gill-chamber, being expelled by spouting through the spiracles. Spouting also appears to be employed as a means of keeping the eyes clean.

IN the May number of the *Zoologist* Mr. C. M. D. Stewart discusses a somewhat mythical snake known to the Zulus as "ndhlondhlo." It was reported to be of huge size, poisonous, very fierce, and furnished with a feather-like crest, while it was also asserted to utter a whistling cry. Its name forms one of the titles of the Zulu king. The main question appears to be whether the creature was a distinct species or whether we have to do with overgrown individuals of the one locally known as the black mamba (*Dendraspis angusticeps*, var.). A snake shot by the Commissioner of Zululand about 1874, measuring about 16 feet in length, and regarded by that gentleman as a black mamba, was declared by the Zulus to be a ndhlondhlo. Certainly naturalists have no knowledge of black mambas of that length, but this by no means proves that such may not have existed. The argument used by the author, that as no such giants are now known the ndhlondhlo must have been a distinct species, does not seem to us to carry much weight.

IN his Huxley memorial lecture for 1903 (*NATURE*, vol. lxxviii., p. 607), Prof. Karl Pearson showed that the mental and moral characters of man are inherited in much the same manner as the physical characters. "We inherit," he said, "our parents' tempers, our parents' conscientiousness, shyness and glibness, even as we inherit their stature, forearm and span." This conclusion was arrived at as the result of a prolonged investigation of fraternal resemblance between children, based on the estimates of school teachers. At the Francis Galton Laboratory for National Eugenics, University of London, the inquiry has been extended to material derived from class lists of the University of Oxford and the school lists of Harrow and Charterhouse, and the results are given in a memoir—"The Inheritance of Ability," by Edgar Schuster and Ethel M. Elderton—just published (London: Dulau and Co., price 4*s.*). The definite object of the investigation was to determine as exactly as possible the resemblance between father and son and brother and brother, as indicated by successes or failures in passing the examination for the B.A. degree at Oxford, or by their positions in school at Harrow and Charterhouse at corresponding times. The results obtained from the Oxford material show that the correlation between father and son is represented by 0.312, and that between brother and brother by 0.405, on a scale by which complete resemblance would be indicated by 1 and no resemblance by 0. The public-school material gave the value 0.398, which is in close agreement with the Oxford value, for the correlation coefficient between brother and brother. The general result of the inquiry is therefore to confirm Prof. Pearson's conclusions as to the inheritance of psychical characters in man.

A REPRINT has been received of an account of the development of the common mushroom, *Agaricus campestris*, contributed by Prof. G. F. Atkinson to the *Botanical Gazette* (September, 1906). Examination of the very early stages indicated that, except for the universal veil, no differentiation was noticeable until the hymenium or spore-bearing layer develops and marks off the stem and the cap. The author states that he has found two spores only arising from the basidia in cultivated varieties, whereas he has often identified four spores in normal pasture forms.

IN the *Trinidad Bulletin* (April) Mr. J. H. Hart, referring to the packing of seeds for the tropics, discriminates between seeds that can be fully dried without injury, such as the seeds of temperate plants, and the seeds of many

tropical plants that lose their vitality if only a small percentage of water is removed. A botanical irregularity in the shape of a nutmeg-tree bearing both staminate and pistillate flowers is recorded from the island. Allusion is also made to a variety *Pongipedunculata*, of the palm *Pritchardia pacifica*, distinguished by the length of the flower stalks, of which plants have been raised from seed originally supplied from British Guiana.

AN irregular series of nuclear changes in the development of the embryo-sac of *Peperomia hispida*, differing slightly from the development in *Peperomia pellucida*, is described by Prof. D. S. Johnson. Sixteen nuclei are formed in the embryo-sac, of which two become the nuclei of the ovum and one synergid respectively, while the remaining fourteen fuse to form the endosperm nucleus; also the divisions of the endosperm nuclei are at once followed by the formation of cell-walls, so that the endosperm is cellular from the start. A preliminary notice with illustrations is published in the Johns Hopkins University Circular (March), wherein Mr. W. D. Hoyt records the observation of crops of sexual cells of *Dictyota dichotoma* at monthly intervals at Beaufort, North Carolina, as compared with fortnightly crops observed by Mr. J. Lloyd Williams at Bangor.

WE have received from the Engineering Standards Committee copies of the British standard specification for ingot steel forgings for marine purposes (No. 29, price 2s. 6d. net), and of the British standard specification for steel bars for use in automatic machines (No. 32, price 2s. 6d. net). The former is based on the present specifications of the Admiralty, the Board of Trade, and the three leading registry societies, whilst the latter is based upon evidence collected from users and manufacturers. The mechanical tests and chemical analyses of steel bars for use in automatic machines are also based on the evidence obtained, supplemented by the results of actual testing. Owing to the widely different results when bars of small diameter are subjected to mechanical tests, it has been decided not to include such tests for steel bars less than half an inch in diameter.

IN 1903 the Canadian Government appointed a commission to investigate the different electrothermic processes for the smelting of iron ores and the making of steel in operation in Europe. Since that date experiments have been made by Dr. P. Héroult at Sault Sainte Marie, Ontario, under Government auspices, in the smelting of Canadian ores in a specially designed electric furnace. The superintendent of mines, Dr. E. Haanel, has now issued a detailed report (Ottawa: Department of the Interior, 1907) containing in 149 pages a statement of the work done and of the results obtained, with analyses of the pig iron and slag produced and of the iron ores employed. Illustrations of the furnace and machinery used are given. The results obtained were most gratifying, and were briefly as follows:—Canadian ores, chiefly magnetites, can be smelted as economically as hæmatites in the electric furnace. Ores high in sulphur can be converted into pig iron containing only a minute proportion of sulphur. The silicon content can be varied as required for the class of pig iron to be produced. Charcoal, which can be cheaply produced from waste material, and peat-coke can be substituted for coke. Nickeliferous pyrrhotite and titaniferous iron ores containing up to 5 per cent. of titanium can be successfully treated. The far-reaching consequences of these results will be apparent. Many magnetites are too high in sulphur to be dealt with in the blast-

furnace, and consequently have hitherto been of no commercial value. The introduction of electric smelting, too, will render it possible to utilise water-power that cannot at present be profitably employed for any other purpose, and to utilise peat bogs and mill refuse or sawdust, for which there has hitherto been no use. An appendix contains an account of recent improvements in electric smelting made in Sweden and in Germany.

IN the *Rendiconti* of the Lombardy Institution, xl., 8, Prof. Torquato Taramelli gives a short obituary notice of the work of Dr. Benedetto Corti. This work consists largely in the study of the fossil microzoa of the Tertiary and Quaternary deposits of Lombardy, and forms an important contribution to Italian geology.

DR. GIOVANNI ZAPPA, writing in the *Atti* of the Lincei Academy, discusses the possibility of the instruments in the observatory at Padua being affected by tides in the Adriatic. The author makes calculations of the gravitational effects, based on tide tables, using a method of triangulation as a basis of rough computation, but the results appear to be too small to have any appreciable effect even on the seismographs at Padua.

IN the Bulletin of the St. Petersburg Academy of Sciences, Prince B. Galitzin describes an experimental verification of Doppler's principle for light rays, conducted in collaboration with I. Wilip. Use was made of rotating mirrors, as in the experiments of Bielopolsky, but by means of the graduated spectroscope (Stufenspektroskope) described previously by Prince Galitzin, it was possible to photograph and measure the displacements of the spectral lines of a mercury arc lamp used as the source of light. In this way quantitative results were obtained within the limits of experimental error.

MR. C. E. BENHAM, writing from Colchester, June 4, points out that it is a common practice in lantern demonstrations, when it is desired to minimise the heat radiation, to interpose a cell of alum solution, though distilled water is actually more athermanous than water with alum in solution. The common belief that an alum solution is very opaque to thermal rays was disproved many years ago, but evidently has not yet quite disappeared even at the present time.

THE supplement to *Mitteilungen aus den deutschen Schutzgebieten* (vol. xx., part ii.) contains the observations made in the year ended June, 1906. Taking into account the results from all stations, the rainfall was favourable, but less in amount than in the two previous years. The annual falls vary, according to position, from 27.5 inches to 0.3 inch; May to August are practically rainless months. The largest amount recorded in one day was 4.5 inches, at Sees, in the central district, on January 30, 1906. The stations now number seventy, against sixty-seven three years previously, notwithstanding that two-thirds of them were destroyed or necessarily abandoned after the outbreak of the war.

OWING to a slight accident, Mr. Francis Galton was unable personally to deliver his Herbert Spencer lecture at Oxford, referred to in last week's NATURE (p. 158), but the lecture was read by his cousin, Mr. A. Galton.

AN illustrated guide to holiday resorts in the United Kingdom has been published under the title of "The Holiday Whitaker," by Messrs. J. Whitaker and Sons, Ltd. The present edition is intended as a guide to resorts for the summer season, and it is proposed to issue another and different edition for the winter season.

ACCURATE and interesting "guides" greatly assist the intelligent visitor to examine and understand the objects exhibited in a museum. The trustees of the British Museum are rendering a great service to natural science in ordering the publication of the excellent series of handbooks to accompany the admirable collections exhibited at the Natural History Museum, South Kensington. The most recent of these volumes is the "Guide to the Fossil Invertebrate Animals in the Department of Geology and Palæontology," which, with its seven half-tone plates and ninety-six text figures, will enable the visitor to the galleries to appreciate the significance and importance of the various fossils on view. We learn from the director's preface that the book has been written by Dr. F. A. Bather, and that the formerly published "Guide to the Fossil Invertebrates and Plants" is partly replaced by the present volume, the price of which is one shilling.

SEVERAL new volumes belonging to the concise and comprehensive series of Hoepli manuals have recently been received from the publisher, Mr. U. Hoepli, Milan. Two volumes by Prof. P. E. Alessandri, entitled "Merceologia Technica," deal respectively with natural and chemical products of commercial and industrial use. Caoutchouc and gutta-percha is the subject of a volume by Dr. L. Settimij, and the preservation of foods of one by Drs. G. B. Franceschi and G. Venturoli. Other volumes are on taxidermy, by Dr. R. Gestro; radio-activity, by Dr. G. A. Blanc; and limnology, or the scientific study of lakes, by Dr. G. P. Magrini.

MANY publications of deep scientific interest have been issued by the Carnegie Institution of Washington and described in the columns of NATURE. A list has just been received of ninety-two works available now or shortly which the institution has published or has in the press. Applications for the list or for copies of the works not out of print should be sent to the Carnegie Institution of Washington, D.C., U.S.A.

THE Proceedings of the Anglo-Russian Literary Society for February, March, and April have now been published in one small volume. The papers read at the monthly meetings of the society, one of the objects of which is to promote the study of the Russian language and literature, are here reprinted. We notice in an obituary of the great Russian chemist, Mendeléeff, the remark, "A prophet is not without honour, save in his own country; Mendeléeff was black-balled at the elections in the Imperial Academy of Sciences."

MESSRS. WEST, NEWMAN AND Co. have published a fifth edition of the late Rev. Joseph Greene's "Insect Hunter's Companion." The little book, which runs to 120 pages, gives instructions for collecting and preserving butterflies, moths, beetles, bees, flies, &c., and has been revised by Mr. A. B. Farn. Its price is 1s. 6d. net.

OUR ASTRONOMICAL COLUMN.

ANOTHER NEW COMET, 1907d.—A telegram from the Kiel Centralstelle announces the discovery of the fourth comet of this year by Mr. Daniel, at Princeton, on June 14. The object was of the twelfth magnitude, and at 14h. 19.1m. (Princeton M.T.) on the day of discovery its position was

R.A. = 23h. 48.53 m., dec. = 1° 8' S.,

which lies about half-way between λ and 29 Piscium. The daily motion is given as +34' in R.A. and +14' in declination.

A second telegram from Kiel states that this comet was

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observed by Prof. Aitken at the Lick Observatory on June 13, when its position at 15h. 7.2m. (Lick M.T.) was

R.A. = 23h. 59m. 44.4s., dec. = 0° 10' 16" S.,

which is about 22.5m. E. and $1\frac{1}{2}^{\circ}$ S. of λ Piscium. This object is apparently becoming brighter at a rapid rate, for Prof. Aitken gives its magnitude as 9.5.

TITANIUM FLUTINGS IN THE SPECTRUM OF α ORIONIS.—From the examination of the spectrum of α Orionis taken with the four-prism spectrograph, Mr. Newall believes that he has discovered the presence of three titanium flutings in the red end of the spectrum of that star. The wavelengths determined for the heads of the flutings, viz. $\lambda\lambda$ 7053, 7087, and 7124, agree fairly well with those found by Messrs. Hale and Adams in the spectrum of the titanium-arc flame, whilst collateral evidence, based on the analogy between the spectra of sun-spots and third-type stars, suggests that these bands are to be expected in stellar spectra of the α Orionis type, because they have been found in sun-spot spectra. Two other flutings, with heads at $\lambda\lambda$ 5166.8 and 5447.1 respectively, were also found, and agree with the heads of the two strongest Ti flutings found by Prof. Fowler.

An inter-comparison of sun-spot spectra and the spectrum of α Orionis shows that numerous spot lines occur in the stellar spectrum (Monthly Notices R.A.S., vol. lxvii., p. 482, May).

TIN IN STELLAR ATMOSPHERES.—On examining some spectrograms of α Scorpii for radial-velocity determinations, Mr. Goatcher, of the Cape Observatory, found a persistent discrepancy occurring when measurements of the wave-length of a line at about λ 4525 were reduced, this line always giving a velocity about 6 km. per second too low. This discordance was examined by Mr. Lunt, who arrived at the conclusion that it is probably due to the hitherto unsuspected presence of a tin line, the wave-length of which, according to Exner and Haschek's tables, is λ 4525.00. In the region covered by the spectrum which was examined, the latter observers give only one other tin line, and as this, according to Sir Norman Lockyer's published tables, is an enhanced line, it is not to be expected in the spectrum of α Scorpii (Antarian type). Should Mr. Lunt's conclusion be confirmed, it will be the first occasion on which tin has been shown to exist in the atmosphere of a star (Monthly Notices R.A.S., vol. lxvii., p. 487).

NON-POLARISATION OF THE LIGHT OF PROMINENCES.—In a note appearing in No. 21 (May 27) of the *Comptes rendus*, M. Salet states that, although he was able, during the total solar eclipse of 1905, to show that the coronal radiations down to the edge of the moon were polarised, he was unable to observe any trace of polarisation in the prominence radiations. M. Salet then points out that this result appears to introduce a contradiction to the theory of Prof. Julius, that the monochromatic light of a point on a prominence comes in reality from a point on the photosphere, for, according to Schmidt, such a ray would be strongly deviated by the successive refractions of the solar envelopes, and should then become partially polarised, the quantity of polarisation depending, by Fresnel's theory, only on the value of the deviation. The absence of polarisation seems, therefore, to argue that the light is not deviated, and, consequently, that it does not have to pass through the solar atmospheres from the disc.

NOVA T CORONÆ OF 1866.—Some interesting observations concerning Nova Coronæ are made by Prof. Barnard in vol. xxv., No. 4 (p. 279, May), of the *Astrophysical Journal*. Before its outburst this star was of magnitude 9.5, then it increased to the second magnitude, finally relapsing to 9.5. Novæ generally fade away to a much less brightness than this.

Prof. Barnard has repeatedly examined this star with the 40-inch refractor, but can find no difference of focus such as usually exists between the light from faded Novæ and the stars in general. Estimations of magnitude show that the star still has essentially the same magnitude that it had before 1866; there is no definite indication of motion in the Nova. Prof. Barnard found a faint nebula in the field with the Nova, the nebula being of magnitude 14.0 or 15.0, and having a diameter of 5" to 10" with no nucleus.